

THE CLAIMS:

31

1. (Currently amended) A position control method for feed drive equipment for a machine tool in which a plurality of ~~feed drive mechanisms~~ screws are disposed in parallel for feeding a movable body associated with the machine tool, the screws being ~~are~~ individually driven by servo motors, the position control method comprising:

determining torque of the servo motors as they drive the screws, and

correcting position commands of at least one servo motor in dependence on the determined torque so that the servo motors have matching torque.

2. (Previously presented) A position control method for feed drive equipment according to claim 1, wherein torque of the servo motors are matched to an average of the determined torque.

3. (Previously presented) A position control method for feed drive equipment according to claim 1, wherein torque of one servo motor is matched to the determined torque of another servo motor.

4. (Previously presented) A position control method for feed drive equipment according to claim 1, wherein a value of a torque command to be input to a current controller of each servo motor is determined as the torque of the servo motor.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

5. (Currently amended) A position control system for feed drive equipment for a machine tool in which a plurality of ~~feed drive mechanisms~~ screws are disposed in parallel for feeding a movable body associated with the machine tool, the screws being ~~are~~ individually driven by servo motors, the position control system comprising:

a controller operatively associated with the screws through the servo motors and adapted to ~~for determining~~ determine torque of the servo motors, and adapted to correct ~~correcting~~ position commands of at least one servo motor in dependence on the determined torque so that the servo motors have matching torque.

6. (Previously presented) A position control system for feed drive equipment according to claim 5, wherein the controller makes torque of the servo motors match to an average of the determined torque.

7. (Previously presented) A position control system for feed drive equipment according to claim 5, wherein the controller makes torque of one servo motor match to the determined torque of another servo motor.

8. (Previously presented) A position control system for feed drive equipment according to claim 5, wherein the controller determines a value of a torque command to be input to a current controller of each servo motor, as the torque of the servo motor.

9. (New) A position control system for feed drive equipment according to claim 5, further comprising:

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

a plurality of feed nuts associated with the screws, the moveable body being attached to the feed nuts, wherein the feed nuts apply torque to the servo motors through the screws.

10. (New) A feed drive system for a tooling machine, comprising:

a plurality of feed drive mechanisms disposed in parallel and associated with the tooling machine;

a movable body associated with the feed drive mechanisms, and adapted to be fed along the feed drive mechanisms;

servo motors associated with the feed drive mechanisms, and adapted to individually drive the feed drive mechanisms;

a controller adapted to determine torque of the servo motors, and adapted to correct position commands of at least one servo motor in dependence on the determined torque so that the servo motors have matching torque.

11. (New) A position control method for feed drive equipment according to claim 10, wherein torque of the servo motors are matched to an average of the determined torque.

12. (New) A position control method for feed drive equipment according to claim 10, wherein torque of one servo motor is matched to the determined torque of another servo motor.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

*B1
Amend*

13. (New) A position control method for feed drive equipment according to claim 10, wherein a value of a torque command to be input to a current controller of each servo motor is determined as the torque of the servo motor.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com